



AF/3683

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John Eric Arnold et al. )  
For: AIRSPRING AND AIRSPRING )  
RETAINER )  
Serial No. 10/009,696 )  
Filed: November 6, 2001 )

Confirmation No. 1392  
Docket No. DN1999111USA  
Art Unit: 3683  
Examiner: Xuan Lan T Nguyen

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(Name of Applicants, Assignee or Registered Representative)

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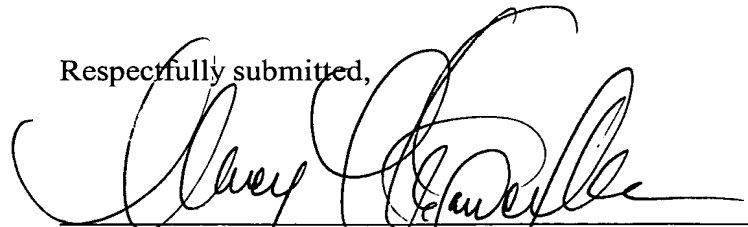
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APPEAL BRIEF

Filed herewith please find Applicant's Appeal Brief, filed in triplicate, pursuant to 37 C.F.R.

The Commissioner is hereby authorized to charge the fee of \$500 to Applicants' Deposit Account 07-1725. The Commissioner is also authorized to charge any additional filing fees which may be required or to refund any overpayment to account No. 07-1725.

Respectfully submitted,

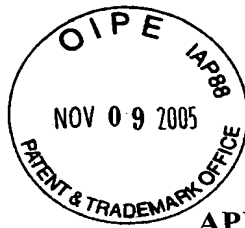
  
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## APPEAL BRIEF

### Real Party in Interest

The real party in interest of the present application is The Goodyear Tire & Rubber Company.

### Related Appeals and Interferences

There are no related appeals or interferences.

### Status of Claims

Claims 1-9, 12, 14, and 16-20 are pending in the application. Claims 1-9, 12, 14, and 16-20 stand rejected.

### Status of Amendments

There are no outstanding amendments. No amendments have been filed subsequent to the last Office Action mailed on September 2, 2005.

### Summary of the Invention

The present invention is directed to an airspring (10). The airspring (10) has at least three essential elements: a flexible cylindrical sleeve (14), and first and second opposing retainers (12, 26) (pg 2, lines 33-34). The sleeve is secured at each end to one of the pistons to form an internal air chamber (20) (pg 2, line 34-pg 3, line 2; pg 4, lines 23-24; Fig 1). The principal aspect of the present invention is the configuration of one of the retainers (26), this preferably being the retainer that secures the lower sleeve ends of the cylindrical sleeve (Figs 1, 2). The retainer (26) is a single piece, functioning as both a retainer and as a bumper (pg 4, lines 25-27). The retainer (26) has a central surface (52), also known as the bumper contact surface, that extends into the chamber (20) (pg 5, lines 9-12). The surface (52) may be flush with the remaining surface of the retainer or raised above the outer circumference of the retainer (pg 5, lines 10-12). To enable the retainer (26) to absorb and transmit forces during contact with the opposing retainer, the retainer (26) is provided with several concentric ribs (34, 40) and may be provided with radially extending ribs (48) (pg 4, line 27 – pg 5, line 8).

## Issues

- I. Is claim 12 indefinite under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter of the invention?
- II. Is the recited invention anticipated under 35 U.S.C. § 102(b) by US Patent 5,201,500?

## Grouping of Claims

All of the pending claims stand and fall together.

## Arguments

*Is claim 12 indefinite under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter?*

Claim 12 has been rejected as being indefinite for not using the specific word “said” before a previously identified element of the invention and for allegedly using the wrong verb tense. 35 U.S.C. § 112, second paragraph recites:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the application regards as his invention.

The principal requirement under 35 U.S.C. § 112 is that the claims distinctly claim the subject matter. The claimed invention is clearly and distinctly pointed out and claimed. Claim 12 is dependent upon both claim 16 and claim 17. Claim 16 recites the airspring as having first and second retainer wherein one of the retainers has a surface that extends into the chamber. Because claim 16 recites more than one retainer, in claim 17 the retainer being modified via the claim language is identified as “the retainer that extends into the chamber” and recites that the retainer has support ribs. Claim 12, dependent on claim 17, further modifies the retainer, reciting “the retainer comprising support ribs” to assist in clarifying which retainer is being further modified. The phrase “comprising support ribs” is an identifying phrase.

One skilled in the art reading through the claims can understand that as the retainer is modified in each claim, language previously used for the modification is

carried forward into the next dependent claim. The failure to use the word “said” does not inherently render the subject matter thereof as not distinctly claimed.

On the 112 rejection of the claim due to an asserted failure to use the wrong very tense, the rejection is incorrect. In the claim, it is the retainer being modified by the language “more than two concentrically disposed ribs.” Since more than one retainer has been recited in claim 16, upon which claim 12 is dependent, the particular retainer is identified as “the retainer comprising support ribs.” The phrase “comprising support ribs” is a dependent phrase identifying the noun “the retainer”; thus, per proper grammar, the verb tense should agree with the noun “retainer” not with the noun “ribs.” The claim properly uses a single verb tense “has” not ‘have’ as set forth in the rejection.

Additionally, were the verb tense incorrect, Applicants do not believe an incorrect verb tense in a claim rises to the level of a 112, first paragraph rejection, but instead is more properly subject to a claim objection.

As the lack of the word “said” fails to render the claim indefinite and the rejection of the claim based on an asserted wrong verb tense is incorrect, claim 12 does particularly point out and distinctly claim the subject matter which Applicant regard as the invention, it is requested that the rejection of the claim under 35 U.S.C. § 112, first paragraph be withdrawn.

*Are the claims anticipated under 35 U.S.C. § 102(b) by Ecktmann et al?*

The present invention is directed to an airspring, both independent claims 1 and 16 require the following elements: a flexible cylindrical sleeve, two retainers, one at each opposing end of the sleeve to secure the sleeve ends to form a chamber. Claim 1 recites that one of the retainers has a centrally located bumper-contact surface “formed as part of the retainer” and claim 16 recites the retainer as having a centrally located axially outer surface. The bumper-contact surface portion of the retainer, per claim 1, or the axially outer surface of the retainer, per claim 16, extend into the chamber formed by the sleeve and contacts the opposing retainer when the airspring is collapsed.

The claims have been held as anticipated under 35 U.S.C. § 102(b) by Ecktmann et al (US 5,201,500). 35 U.S.C. § 102(b) recites:

A person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Ecktmann et al discloses an airspring comprising a flexible cylindrical sleeve and two retainers that secure the sleeve at opposing ends. The upper sleeve end is secured by crimping the upper retainer 2 around the sleeve end. The lower sleeve end is “clamped on base 4 of piston 3 by a clamping plate 12 in an air tight sealing relationship” (col 3, lines 32-34; Figures 2-4). The clamping plate 12 of Ecktmann et al is a bowl shaped element with a central cap 34 (col 4, lines 9-15; Figures 2-4). The plate 12 is preferably metal as evidenced by the teaching that the cap is “secured to clamp plate 12 by brazing” (col 3, lines 15-16). According to the teachings of Ecktmann et al, a separate snap-on bumper 20 “is mounted on base 4 of piston 3 and extends upwardly therefrom into chamber 15” for engagement with the opposing retainer 2 to assist in absorbing excessive shock forces (col 3, lines 56-62). This separate snap-on bumper satisfies the inventive goal of Ecktmann et al by replacing the conventional heavy elastomeric bumper with a lighter weight, easier to install bumper.

Contrary to Applicants’ claims that recite that a portion of the sleeve end securing retainer both enters into the chamber and contacts the opposing retainer when the airspring is collapsed, due to the bowl shape of the lower retainer plate 12 of Ecktmann et al, no portion of the plate 12 of Ecktmann et al enters into the air chamber (Figure 2), nor can any portion of the retainer plate 12 contact the opposing retainer 2 when the airspring is collapsed.

The courts have held that under 35 U.S.C. § 102 a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Herein, Ecktmann et al does not disclose a retainer having a surface that enters the chamber or contacts the opposing retainer. Thus, Ecktmann et al does not disclose each and every element and fails to anticipate the claimed invention.

In the rejection of the claim, it is asserted that a “retainer has many parts, the bumper-contact surface is just one part of many” parts of the retainer and thus the outer surface of the snap-on bumper 20 of Ecktmann et al is held to be Applicants’ recited retainer bumper contact surface. Applicants respectfully disagree for several reasons. First, as disclosed and described by Ecktmann et al, the retainer plate 12 has only one part: the lipped bowl shaped metal piece with a central opening. At a most generous interpretation, the retainer has, at most, two parts: the bowl shaped piece and the cap, as the cap is brazed onto the center of the bowl shaped piece. The bumper is a separately applied element that is secured to the cap and mounted onto the retainer – it is not part of the retainer. Second, by definition of the word “retainer,” and as used in the airspring art, a retainer “retains,” or secures, something. As used in the airspring art, those skilled in the art know that the purpose of a retainer is to secure the ends of the elastomeric sleeve of the airspring to assist in forming the internal gas chamber. The bumper of Ecktmann et al in no way assists in securing the sleeve ends of Ecktmann et al. The purpose of an airspring bumper to prevent the airspring from completely collapsing and to absorb forces when the airspring is compressed.

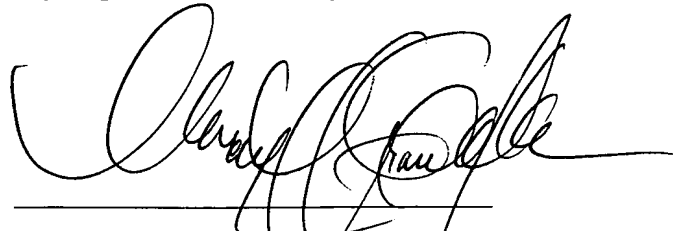
Independent claim 1 recites that the retainer has a bumper contact surface formed as a part of the retainer that contacts the other retainer when the airspring is collapsed. Thus, per the claim, the retainer and the bumper contact surface are formed together; i.e. cast, molded, formed, or made as a single piece. The airspring construction of Ecktmann et al fails to have such a construction. There is nothing in Ecktmann et al, in either text or drawings, that shows the lower retainer 12 of Ecktmann et al having the bumper 20 being formed as part of the retainer 12. In fact, Ecktmann et al teaches that cap 34 is secured “by brazing at 35” to retainer 12 (col 4, lines 11-16); thus indicating that the lower retainer 12 of Ecktmann et al is metal as brazing is only performed to bond metal items to metal items while the bumper 20 of Ecktmann et al is formed of a high strength polyester elastomer or plastic (col 4, line 60+). There is nothing in Ecktmann et al which suggests forming the retainer plate 12 from a high strength polyester elastomer or plastic, and forming the bumper from metal would be contrary to the explicit teachings of Ecktmann et al to form a lighter weight bumper (col 5, line 9-18).

In the rejection of claim 16, the plate 12 and bumper 20 of Ecktmann et al are simply referred to as the “second retainer;” and it is asserted that the bumper 20 is

simply a part of plate 12. However, referring to these separately formed and mechanically joined elements as a single element does not make them so. Ecktmann et al does not teach having a retainer with a centrally located axially outer surface that can contact the opposing retainer. The central portion of the retainer 12 of Ecktmann et al is actually radially inward of the edges of the retainer and cannot contact the opposing retainer as recited.

In response to Applicants' arguments it is held that the claim language does not exclude the bumper of Ecktmann et al to be part of the retainer. Applicants own teachings and invention are being used in hindsight when it is asserted that the separate elements of Ecktmann et al can be considered a single element because the claims do not "exclude" such a construction. Applicants have determined that the lower retainer can be constructed and formed in such a manner that the inventive retainer has two functions: to retain the sleeve edges and to act as a bumper during airspring compression; replacing two conventional separately formed elements – thereby simplifying construction of an airspring. Ecktmann et al teaches that these functions are performed by two separate elements, and fails to teach or appreciate a single element performing both functions.

As Ecktmann et al fails to disclose each and every claim element as required under 35 U.S.C. 102(b), it is respectfully requested that the rejection of the claims over Ecktmann et al be withdrawn.



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## CLAIMS

1. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and at the opposing end to other retainer (26 or 12), the improvement being characterized by:

one of the retainers (26) having a bumper-contact surface (52) within the sleeve (14) for axial movement into the sleeve (14), the bumper-contact surface formed as a part of the retainer and which contacts the other retainer (12) when the airspring is collapsed, and absorbs and transmits forces generated from such contact, the bumper contact surface (52) being centrally located on the surface of the retainer (26) which extends into the sleeve (14) during axial movement into the sleeve (14).

2. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is comprised of support ribs (34, 40, 42, 44, 48).

3. An airspring (10) in accordance with claim 2 wherein the support ribs are substantially radially extending (42, 48).

4. An airspring (10) in accordance with claim 2 wherein the support ribs are a series of concentrically disposed ribs (34, 40, 44).

5. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is defined by a first axially outer surface (52) which extends into the airspring sleeve (14) and a second axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces being the bumper-contact surface (52) and the axial difference between the two surfaces being greater than zero to separate the two surfaces by a dimension (b).

6. An airspring (10) in accordance with claim 5 wherein the retainer (26) having the bumper-contact surface (52) has an axial height (H) as measured from the axially outer

most surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).

7. An airspring (10) in accordance with claim 1 wherein the airspring (10) further comprises a piston (28) and the flexible sleeve (14) is comprised of a bead ring (24) at one end, the bead ring (24) being secured between the retainer (26) having the bumper-contact surface (52) and the piston (28).

8. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is formed from a thermoplastic material having a tensile strength in the range of 1965 to 3165 kg/cm<sup>2</sup> (28,000 to 45,000 psi), and a flex strength in the range of 2810 to 4220 kg/cm<sup>2</sup> (40,000 to 60,000 psi).

9. An airspring (10) in accordance with claim 8 wherein the retainer (26) is formed from a material selected from the following group: fiberglass reinforced nylon, long fiber reinforced thermoplastic, and short fiber reinforced thermoplastic.

10. (canceled)

11. (canceled)

12. An airspring (10) in accordance with claim 17 wherein the retainer comprising support ribs has more than two concentrically disposed ribs.

13. (canceled)

14. An airspring (10) in accordance with claim 18 wherein the retainer (26) that extends into the chamber (20) has an axial height (H) as measured from the axially outermost surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).

15. (canceled)

16. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, a chamber (20) created by the secured sleeve (14), a piston (28), and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and an opposing end of the sleeve (14) being secured between the piston (28) and the other retainer (26 or 12), wherein:

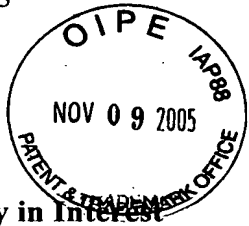
one of the retainers (26) has a centrally located axially outer surface (52), the axially outer surface (52) extends into the chamber (20) during axial movement, wherein the axially outer surface (52) of the retainer (26) contacts the other retainer (12) when the airspring is collapsed.

17. An airspring in accordance with claim 16 wherein the retainer that extends into the chamber (20) has support ribs (34, 40, 42, 44, 48).

18. An airspring in accordance with claim 16 wherein the retainer (26) that extends into the chamber (20) has a separate axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces (50, 52) being the surface which contacts the other retainer (12) when the airspring is collapsed, and the axial difference between the two outer surfaces (50, 52) being greater than zero to separate the two surfaces by a dimension (b).

19. An airspring in accordance with claim 16 wherein the axially outer surface (52) of the retainer is radially inward, relative to a radial center of the airspring, of the secured ends of the elastomeric sleeve (14) secured by the retainer having the axially outer surface that contacts the other retainer.

20. An airspring in accordance with claim 16 wherein the airspring has no separately formed and applied bumper on either retainer.



## APPEAL BRIEF

### Real Party in Interest

The real party in interest of the present application is The Goodyear Tire & Rubber Company.

### Related Appeals and Interferences

There are no related appeals or interferences.

### Status of Claims

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## Issues

- I. Is claim 12 indefinite under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter of the invention?
- II. Is the recited invention anticipated under 35 U.S.C. § 102(b) by US Patent 5,201,500?

## Grouping of Claims

All of the pending claims stand and fall together.

## Arguments

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One skilled in the art reading through the claims can understand that as the retainer is modified in each claim, language previously used for the modification is

carried forward into the next dependent claim. The failure to use the word "said" does not inherently render the subject matter thereof as not distinctly claimed.

On the 112 rejection of the claim due to an asserted failure to use the wrong very tense, the rejection is incorrect. In the claim, it is the retainer being modified by the language "more than two concentrically disposed ribs." Since more than one retainer has been recited in claim 16, upon which claim 12 is dependent, the particular retainer is identified as "the retainer comprising support ribs." The phrase "comprising support ribs" is a dependent phrase identifying the noun "the retainer"; thus, per proper grammar, the verb tense should agree with the noun "retainer" not with the noun "ribs." The claim properly uses a single verb tense "has" not 'have' as set forth in the rejection.

Additionally, were the verb tense incorrect, Applicants do not believe an incorrect verb tense in a claim rises to the level of a 112, first paragraph rejection, but instead is more properly subject to a claim objection.

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*Are the claims anticipated under 35 U.S.C. § 102(b) by Ecktmann et al?*

The present invention is directed to an airspring, both independent claims 1 and 16 require the following elements: a flexible cylindrical sleeve, two retainers, one at each opposing end of the sleeve to secure the sleeve ends to form a chamber. Claim 1 recites that one of the retainers has a centrally located bumper-contact surface "formed as part of the retainer" and claim 16 recites the retainer as having a centrally located axially outer surface. The bumper-contact surface portion of the retainer, per claim 1, or the axially outer surface of the retainer, per claim 16, extend into the chamber formed by the sleeve and contacts the opposing retainer when the airspring is collapsed.

The claims have been held as anticipated under 35 U.S.C. § 102(b) by Ecktmann et al (US 5,201,500). 35 U.S.C. § 102(b) recites:

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Contrary to Applicants' claims that recite that a portion of the sleeve end securing retainer both enters into the chamber and contacts the opposing retainer when the airspring is collapsed, due to the bowl shape of the lower retainer plate 12 of Ecktmann et al, no portion of the plate 12 of Ecktmann et al enters into the air chamber (Figure 2), nor can any portion of the retainer plate 12 contact the opposing retainer 2 when the airspring is collapsed.

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In the rejection of the claim, it is asserted that a “retainer has many parts, the bumper-contact surface is just one part of many” parts of the retainer and thus the outer surface of the snap-on bumper 20 of Ecktmann et al is held to be Applicants’ recited retainer bumper contact surface. Applicants respectfully disagree for several reasons. First, as disclosed and described by Ecktmann et al, the retainer plate 12 has only one part: the lipped bowl shaped metal piece with a central opening. At a most generous interpretation, the retainer has, at most, two parts: the bowl shaped piece and the cap, as the cap is brazed onto the center of the bowl shaped piece. The bumper is a separately applied element that is secured to the cap and mounted onto the retainer – it is not part of the retainer. Second, by definition of the word “retainer,” and as used in the airspring art, a retainer “retains,” or secures, something. As used in the airspring art, those skilled in the art know that the purpose of a retainer is to secure the ends of the elastomeric sleeve of the airspring to assist in forming the internal gas chamber. The bumper of Ecktmann et al in no way assists in securing the sleeve ends of Ecktmann et al. The purpose of an airspring bumper to prevent the airspring from completely collapsing and to absorb forces when the airspring is compressed.

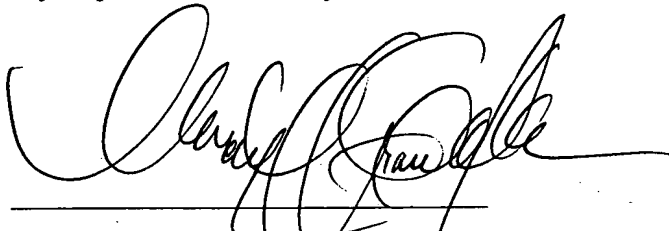
Independent claim 1 recites that the retainer has a bumper contact surface formed as a part of the retainer that contacts the other retainer when the airspring is collapsed. Thus, per the claim, the retainer and the bumper contact surface are formed together; i.e. cast, molded, formed, or made as a single piece. The airspring construction of Ecktmann et al fails to have such a construction. There is nothing in Ecktmann et al, in either text or drawings, that shows the lower retainer 12 of Ecktmann et al having the bumper 20 being formed as part of the retainer 12. In fact, Ecktmann et al teaches that cap 34 is secured “by brazing at 35” to retainer 12 (col 4, lines 11-16); thus indicating that the lower retainer 12 of Ecktmann et al is metal as brazing is only performed to bond metal items to metal items while the bumper 20 of Ecktmann et al is formed of a high strength polyester elastomer or plastic (col 4, line 60+). There is nothing in Ecktmann et al which suggests forming the retainer plate 12 from a high strength polyester elastomer or plastic, and forming the bumper from metal would be contrary to the explicit teachings of Ecktmann et al to form a lighter weight bumper (col 5, line 9-18).

In the rejection of claim 16, the plate 12 and bumper 20 of Ecktmann et al are simply referred to as the “second retainer;” and it is asserted that the bumper 20 is

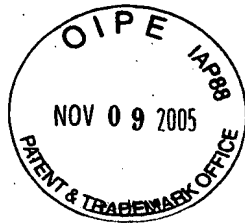
simply a part of plate 12. However, referring to these separately formed and mechanically joined elements as a single element does not make them so. Ecktmann et al does not teach having a retainer with a centrally located axially outer surface that can contact the opposing retainer. The central portion of the retainer 12 of Ecktmann et al is actually radially inward of the edges of the retainer and cannot contact the opposing retainer as recited.

In response to Applicants' arguments it is held that the claim language does not exclude the bumper of Ecktmann et al to be part of the retainer. Applicants own teachings and invention are being used in hindsight when it is asserted that the separate elements of Ecktmann et al can be considered a single element because the claims do not "exclude" such a construction. Applicants have determined that the lower retainer can be constructed and formed in such a manner that the inventive retainer has two functions: to retain the sleeve edges and to act as a bumper during airspring compression; replacing two conventional separately formed elements – thereby simplifying construction of an airspring. Ecktmann et al teaches that these functions are performed by two separate elements, and fails to teach or appreciate a single element performing both functions.

As Ecktmann et al fails to disclose each and every claim element as required under 35 U.S.C. 102(b), it is respectfully requested that the rejection of the claims over Ecktmann et al be withdrawn.



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## CLAIMS

1. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and at the opposing end to other retainer (26 or 12), the improvement being characterized by:

one of the retainers (26) having a bumper-contact surface (52) within the sleeve (14) for axial movement into the sleeve (14), the bumper-contact surface formed as a part of the retainer and which contacts the other retainer (12) when the airspring is collapsed, and absorbs and transmits forces generated from such contact, the bumper contact surface (52) being centrally located on the surface of the retainer (26) which extends into the sleeve (14) during axial movement into the sleeve (14).

2. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is comprised of support ribs (34, 40, 42, 44, 48).

3. An airspring (10) in accordance with claim 2 wherein the support ribs are substantially radially extending (42, 48).

4. An airspring (10) in accordance with claim 2 wherein the support ribs are a series of concentrically disposed ribs (34, 40, 44).

5. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is defined by a first axially outer surface (52) which extends into the airspring sleeve (14) and a second axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces being the bumper-contact surface (52) and the axial difference between the two surfaces being greater than zero to separate the two surfaces by a dimension (b).

6. An airspring (10) in accordance with claim 5 wherein the retainer (26) having the bumper-contact surface (52) has an axial height (H) as measured from the axially outer

most surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).

7. An airspring (10) in accordance with claim 1 wherein the airspring (10) further comprises a piston (28) and the flexible sleeve (14) is comprised of a bead ring (24) at one end, the bead ring (24) being secured between the retainer (26) having the bumper-contact surface (52) and the piston (28).

8. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is formed from a thermoplastic material having a tensile strength in the range of 1965 to 3165 kg/cm<sup>2</sup> (28,000 to 45,000 psi), and a flex strength in the range of 2810 to 4220 kg/cm<sup>2</sup> (40,000 to 60,000 psi).

9. An airspring (10) in accordance with claim 8 wherein the retainer (26) is formed from a material selected from the following group: fiberglass reinforced nylon, long fiber reinforced thermoplastic, and short fiber reinforced thermoplastic.

10. (canceled)

11. (canceled)

12. An airspring (10) in accordance with claim 17 wherein the retainer comprising support ribs has more than two concentrically disposed ribs.

13. (canceled)

14. An airspring (10) in accordance with claim 18 wherein the retainer (26) that extends into the chamber (20) has an axial height (H) as measured from the axially outermost surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).

15. (canceled)

16. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, a chamber (20) created by the secured sleeve (14), a piston (28), and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and an opposing end of the sleeve (14) being secured between the piston (28) and the other retainer (26 or 12), wherein:

one of the retainers (26) has a centrally located axially outer surface (52), the axially outer surface (52) extends into the chamber (20) during axial movement, wherein the axially outer surface (52) of the retainer (26) contacts the other retainer (12) when the airspring is collapsed.

17. An airspring in accordance with claim 16 wherein the retainer that extends into the chamber (20) has support ribs (34, 40, 42, 44, 48).

18. An airspring in accordance with claim 16 wherein the retainer (26) that extends into the chamber (20) has a separate axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces (50, 52) being the surface which contacts the other retainer (12) when the airspring is collapsed, and the axial difference between the two outer surfaces (50, 52) being greater than zero to separate the two surfaces by a dimension (b).

19. An airspring in accordance with claim 16 wherein the axially outer surface (52) of the retainer is radially inward, relative to a radial center of the airspring, of the secured ends of the elastomeric sleeve (14) secured by the retainer having the axially outer surface that contacts the other retainer.

20. An airspring in accordance with claim 16 wherein the airspring has no separately formed and applied bumper on either retainer.